

Abstract

Provided are DNA sequences encoding cyclin-dependent kinase inhibitor(s) as well as to methods for obtaining the same. Furthermore, vectors comprising said DNA sequences are described, wherein the DNA sequences are operatively linked to regulatory elements allowing expression in prokaryotic and/or eukaryotic host cells. In addition, proteins encoded by said DNA sequences, antibodies to said proteins and methods for their production are provided. Furthermore, regulatory sequences which naturally regulate the expression of the above described DNA sequences are described. Also described is a method for controlling or altering growth characteristics of a plant and/or a plant cell comprising introduction and/or expression of one or more cyclin-dependent kinase inhibitor(s) functional in a plant or parts thereof and/or one or more DNA sequences encoding such proteins. Also provided is a process for disruption plant cell division by interfering in the expression or activity of a cyclin-dependent protein kinase inhibitor using a DNA sequence according to the invention wherein said plant cell is part of a transgenic plant. Further described are diagnostic compositions comprising the aforementioned DNA sequences, proteins, antibodies and regulatory sequences. Methods for the identification of compounds being capable of activating or inhibiting the cyclin-dependent kinase inhibitors are described as well. Furthermore, transgenic plant cells, plant tissue and plants containing the above-described DNA sequences and vectors are described as well as the use of the aforementioned DNA sequences, vectors, proteins, antibodies, regulatory sequences and/or compounds identified by the method of the invention in plant cell and tissue culture, plant breeding and/or agriculture.